

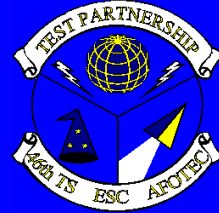
# ***Electronic Systems Center Test and Evaluation Directorate***

## ***Integrating Test and Evaluation Into Spiral Development***

Colonel Norman E.  
Johnson  
JAN 27 1999



# **C2 Systems Acquisition A Historical Perspective**



*Test & Evaluation*

## **Problems**

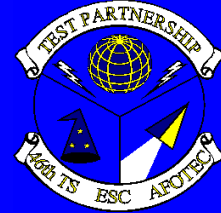
- Inadequately defined requirements
- Unacceptable cost growth
- Intolerable program delays
- Ineffective systems fielded
- Inadequate DT&E

## **Causes**

- Inflexible acquisition strategies
- Success measured by cost & schedule criteria—not performance
- Culture: Field now—fix later
- Inadequate DT/OT processes
- Unrealistic Resource Estimation

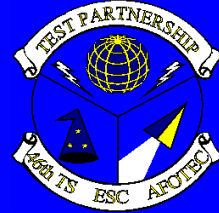


# ***C2 Combined Test Force (CTF) Direction***



***Test & Evaluation***

- **CSAF Tasker from 4-Star C2 Summit**
  - “Establish C2 Combined Test Forces and delineate the procedures which will facilitate spiral development and rapid fielding of capabilities”
- **C2 T&E Blueprint**
  - Implement and institutionalize the use of CTFs for all C2 systems
  - AAC will establish and lead C2 CTFs



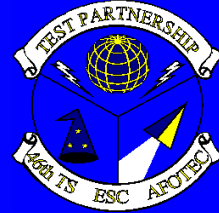
# ***CTF Definition***

***Test & Evaluation***

**An integrated T&E product team empowered to evaluate a C2 system by collocating its major members or by establishing a distributed alliance its members. Includes, at a minimum, representation from the DT&E and OT&E communities, developers, contractors, and operators/users groups**



# ***C2 CTF CONOPS***

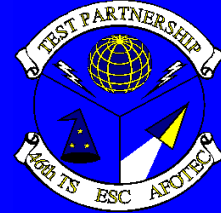


***Test & Evaluation***

- **Purpose:**
  - Provide tailorable guidance for C2 CTFs
  - Act as a handbook for CTF formation, location, and resource/cost
  - Emphasize combined testing philosophy
- **Reflects C2 T&E Blueprint and incorporates best practices from other CTFs**



# C2 CTF CONOPS Overview

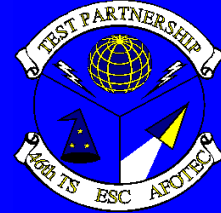


**Test & Evaluation**

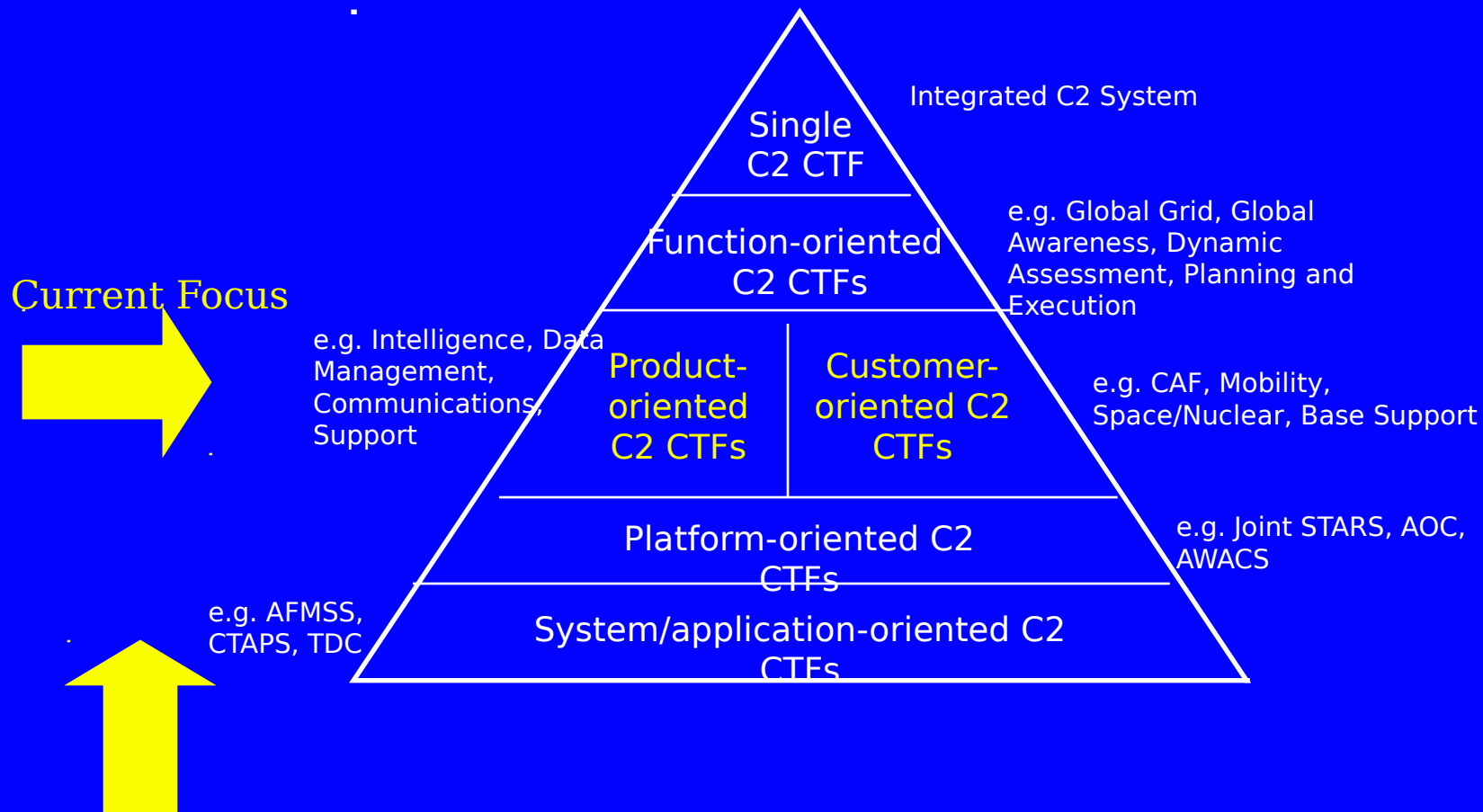
- **New processes**
  - C2 CTF formation
  - C2 CTF chartering
  - *Test Planning Board (TPB)*
- **Oversight of C2 CTF Formation/Migration**
  - *C2 CTF Oversight Group*
  - *C2 T&E GOSG*
- **Guidance for CTF organization, leadership, membership, IOC/FOC criteria, and location**
  - Traditional
  - Distributed
  - Roaming



# Levels of CTFs



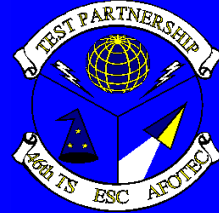
**Test & Evaluation**



**Start with Pilot Programs and Migrate**



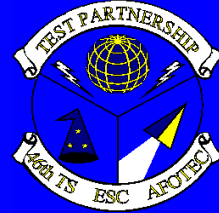
# ***Test and Evaluation Mission Statement***



***Test & Evaluation***

**Provide our customers with  
*disciplined, tailored* test processes,  
facilities coordination,  
training, and test expertise  
to seamlessly integrate C2 testing into  
their spiral development processes  
within resource constraints and to  
provide *early and continuous insight*  
and *value-added into their test*  
*processes***





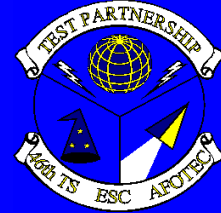
# ***ESC/TE Customers***

***Test & Evaluation***

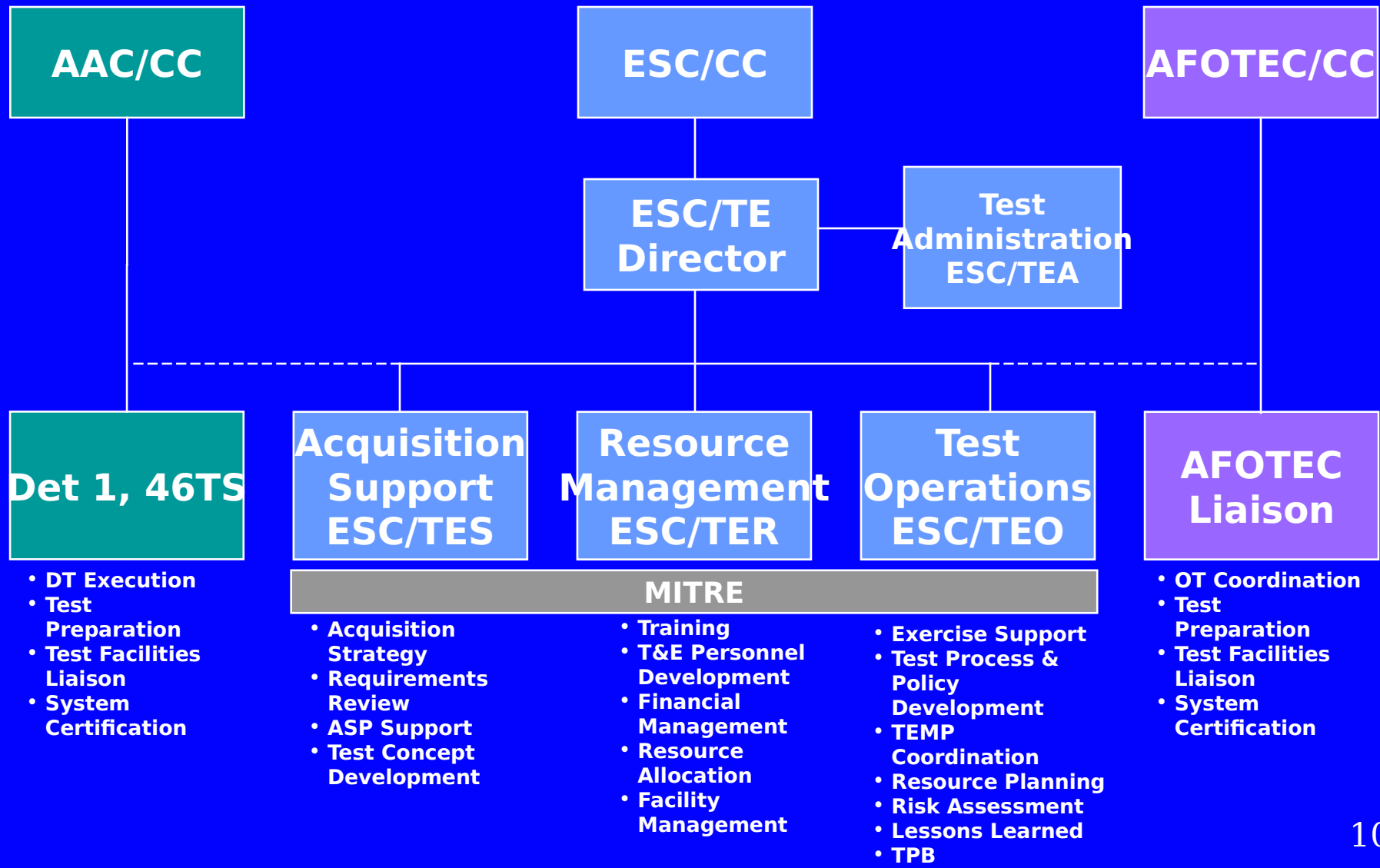
- **The ultimate customer is always the warfighter in the field: information warriors and warfighters of all disciplines who employ information with their weapons**
- **The immediate customer is the Program Manager: the person who needs to reduce acquisition risk and determine the effectiveness and suitability of his or her product**

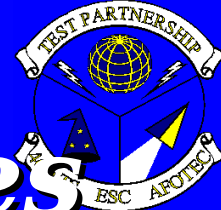


# Organization to Support the Process



## Test & Evaluation





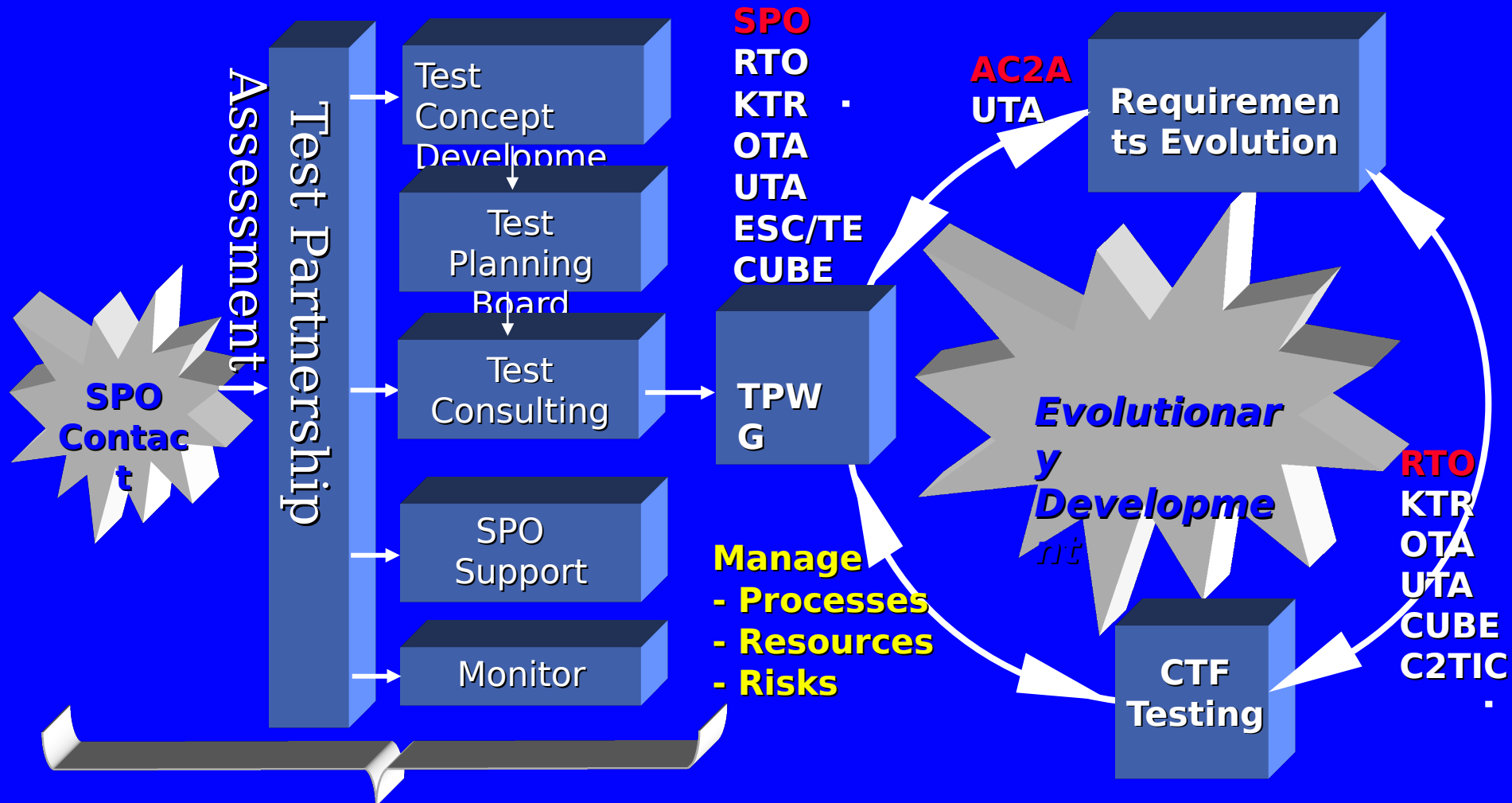
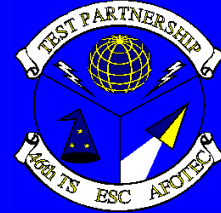
# ***The Test Partnership Roles and Responsibilities***

***Test & Evaluation***

- **ESC/TE**
  - **Integrate T&E processes into the *evolutionary* acquisition process**
  - **Test consultation**
  - **Develop professional T&E personnel**
    - ~ Train professional test managers
    - ~ Provide guidance for inexperienced Test Manager
  - **Focal point for T&E-related issues**
- **AAC, Det 1, 46TS**
  - **Facilitate DT&E integration into spiral development**
  - **Execute DT&E**
- **AFOTEC OL/HM**
  - **Facilitate OT&E integration into spiral development**
  - **Coordinate OT execution**



# Integrating T&E into Evolutionary Acquisition Process

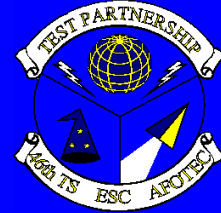


**T&E's On-ramp to Spiral Acquisition**

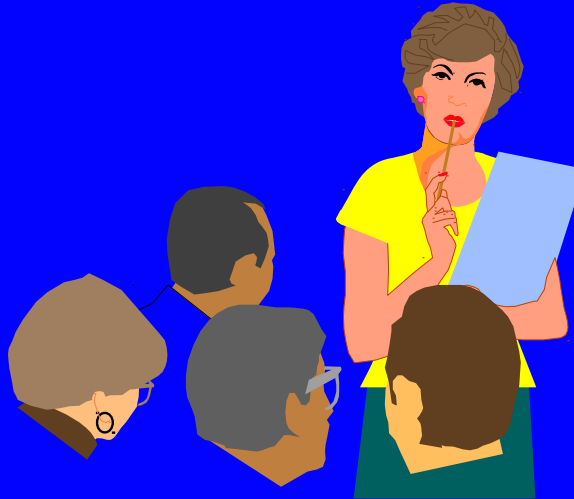
**OA DT DT/OT OT**  
**DR Certs I&I Y2K 12**



# ***Develop T&E Professionals***



***Test & Evaluation***



## **Develop T&E Professionals**

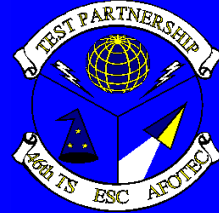
**T&E  
Training  
g  
(APDP**

**C2  
Training**

**C2 T&E  
Training**



# ***C2 Test Manager Course***



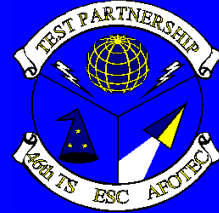
***Test & Evaluation***

- **Objective: Provide understanding of C2 T&E and provide a foundation of directives, guidance and tools for the ESC Test Manager**
  - **C2 Environment & Technology**
  - **ESC Acquisition Processes**
  - **C2 Systems Developed by ESC**
  - **ESC GSUs**
  - **Becoming an ESC Test Manager**
  - **Doing the Job**
  - **Classroom Practicum & Case Studies**

This course is comprehensive, and essential for ESC  
TMs



# ***Focal Point for T&E Issues***

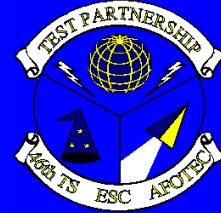


***Test & Evaluation***

- **Support the Test Planning process**
  - Test Planning Boards
  - Participation in TPWGs
  - TEMP Coordination
- **Facilities Coordination**
  - CUBE
  - AF C2TIC
  - MASC
- **Certification Coordination**
  - Y2K
  - DII-COE
  - JITC
  - OT&E Readiness
- **T&E Related Training Coordination**
  - APDP Test Courses
  - AFOTEC Test Managers Course
  - ESC C2 Test Managers Course



# **Command and Control Training and Innovation Center Mission**



**Test & Evaluation**

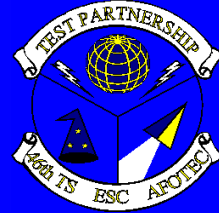
The following contains a list of missions performed by the C2TIC:

- Focal point for C2 tactics, techniques, and procedures
- Baseline Air Operations Center
- Establish training and testing ASOC
- Formal C2 JFACC Team training - 10,000 warfighters annually through exercises and academics
- Integration of C2 systems, enhancement of MS&A
- **Fielding recommendations/Configuration Control**
- **Process and system operational test and evaluation**
- **Rapid technology assessment and insertion**
- **C2 Testbed, focus of the Air Force Battlelabs**
- **EFX as cornerstone exercise/experiment**

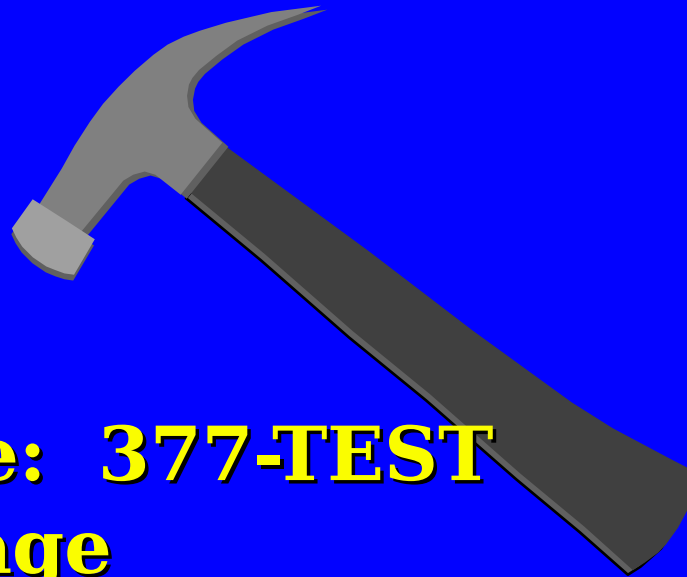




# ***T&E Resources Available Now***



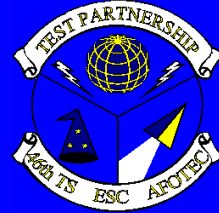
***Test & Evaluation***



- **T&E hotline: 377-TEST**
- **T&E web page**
- **Automated Test Planning System (ATPS)**
- **Test Manager Handbook**



# ***Test Manager Handbook***



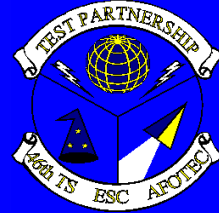
***Test & Evaluation***

- **Defines key processes to plan/conduct test in the spiral model**
- **Provides guidance on:**
  - **Forming test strategy**
  - **Key test documentation TEMP, Charter**
  - **Key processes:**
    - ~ **Test Planning Board,**
    - ~ **I&I/certification tests,**
    - ~ **Deficiency reporting,**
    - ~ **OT templates**
  - **Parallels C2 Test Manager Training course**
- **On-line Jun 98; drafts available on request now**

This is the ESC Tester's T.O.



# Test & Evaluation A Team Effort



*Test & Evaluation*

